

UNIVERSITI TEKNOLOGI MARA

**IOT-BASED SMART BICYCLE FOR MONITORING
AIR POLLUTION**

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DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Air pollution affects our day-to-day activities and quality of life. The dire need to control air quality is very obvious due to increased industrial activity over the past few years. This project has developed an effective solution for real-time monitoring of air pollution. This project proposed an IoT-based Smart Bicycle for Monitoring Air Pollution (ISBMAP) in which the information of air pollution is monitored and alerted to users when air pollution levels go beyond a certain amount, indicating that there are enough harmful gasses in the air such as CO₂, smoke, ethanol, benzene, NH₃, and some other gasses. This system implements the combination of a NodeMCU, gas sensor (MQ135), OLED Display and Thingspeak to sense the air pollution of the environment and shows the real conditions of air. This has made it possible to collect, process and present air quality data in a cheaper and more efficient way that is not only beneficial to environmental authorities but also to citizens. Finally ISBMAP prototype was tested and abled to sense the accuracy of air pollution in large area coverage and ability to integrate this system with web server.

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